SEQUENCE LISTING

| <110> WELCHER, ANDREW SARMIENTO, ULLA SCHULTZ, HENRY CHUTE, HILARY | |
|---|-----|
| <120> B7-LIKE MOLECULES AND USES THEREOF | |
| <130> A-692 | |
| <140> Not Yet Provided <141> 2000-11-28 | |
| <150> US 60/214,512 <151> 2000-06-28 | |
| <160> 15 | |
| <170> PatentIn version 3.0 | |
| <210> 1 <211> 1175 <212> DNA <213> Homo sapiens | |
| <220> <221> CDS <222> (27)(1172) | |
| <400> 1 ctgtctgccc atctgaataa caagag atg ggg ctt gtg att ttc ctc cac ggt | 53 |
| tct ggg tct ggt aat gaa gtc ata gaa ggc ccc cag aat gca aca gtc Ser Gly Ser Gly Asn Glu Val Ile Glu Gly Pro Gln Asn Ala Thr Val 10 20 25 | 101 |
| ctg aag ggc tcc cag gct cgc ttc aac tgc acc gtc tcc cag ggc tgg Leu Lys Gly Ser Gln Ala Arg Phe Asn Cys Thr Val Ser Gln Gly Trp 30 35 40 | 149 |
| aag ctc atc atg tgg gct ctc agt gac atg gtg gtg cta agc gtc agg Lys Leu Ile Met Trp Ala Leu Ser Asp Met Val Val Leu Ser Val Arg 45 50 55 | 197 |
| ccc atg gag ccc atc atc acc aat gac cgc ttc acc tct cag agg tac Pro Met Glu Pro Ile Ile Thr Asn Asp Arg Phe Thr Ser Gln Arg Tyr 60 65 70 | 245 |
| gac cag ggc ggg aac ttc acc tcg gag atg atc atc cac aat gtg gag Asp Gln Gly Gly Asn Phe Thr Ser Glu Met Ile Ile His Asn Val Glu 75 80 85 | 293 |
| ccc agt gat tcg ggg aac atc aga tgc agc ctc cag aac agt cgc ctg Pro Ser Asp Ser Gly Asn Ile Arg Cys Ser Leu Gln Asn Ser Arg Leu 90 95 100 105 | 341 |
| cat gga tct gct tac ctt acc gtc caa gtt atg gga gag ctg ttc att His Gly Ser Ala Tyr Leu Thr Val Gln Val Met Gly Glu Leu Phe Ile 110 115 120 | 389 |

| ccc Pro | agt Ser | gtt Val | aat Asn 125 | ctt Leu | gta Val | gtc Val | gct Ala | gag Glu 130 | aat Asn | gaa Glu | cct Pro | tgt Cys | gaa Glu 135 | gtt Val | act Thr | 437 |
|------------|------------|-------------------|-------------------|------------|-------------------|------------|-------------------|-------------------|------------|------------|------------|-------------------|-------------------|------------|------------|------|
| | | | | | tgg Trp | | | | | | | | | | | 485 |
| | | | | | cat His | | | | | | | | | | | 533 |
| | | | | | gtg Val 175 | | | | | | | | | | | 581 |
| | | | | | gtg Val | | | | | | | | | | | 629 |
| | | | | | ctc Leu | | | | | | | | | | | 677 |
| | | | | | cca Pro | | | | | | | | | | | 725 |
| | | | | | tgg Trp | | | | | | | | | | | 773 |
| | | | | | acg Thr 255 | | | | | | | | | | | 821 |
| | | | | | ggc Gly | | | | | | | | | | | 869 |
| | | | | | gga Gly | | | | | | | | | | | 917 |
| aaa Lys | gag Glu | aag Lys 300 | aca Thr | aac Asn | aaa Lys | gaa Glu | act Thr 305 | gag Glu | aca Thr | gaa Glu | agt Ser | gga Gly 310 | aat Asn | gaa Glu | aac Asn | 965 |
| | | | | | gat Asp | | | | | | | | | | | 1013 |
| | | | | | gaa Glu 335 | | | | | | | | | | | 1061 |
| | | | | | cag Gln | | | | | | | | | | | 1109 |
| agt Ser | cat His | cca Pro | cag Gln 365 | gct Ala | tct Ser | ttt Phe | aat Asn | ctg Leu 370 | gcc Ala | agt Ser | cct Pro | gag Glu | aag Lys 375 | gtc Val | agt Ser | 1157 |

aat aca act gta gta tag Asn Thr Thr Val Val 380 1175

<210> 2

<211> 382

<212> PRT

<213> Homo sapiens

<400> 2

Met Gly Leu Val Ile Phe Leu His Gly Ser Gly Ser Gly Asn Glu Val 1 5 10 15

Ile Glu Gly Pro Gln Asn Ala Thr Val Leu Lys Gly Ser Gln Ala Arg 20 25 30

Phe Asn Cys Thr Val Ser Gln Gly Trp Lys Leu Ile Met Trp Ala Leu 35 40 45

Ser Asp Met Val Val Leu Ser Val Arg Pro Met Glu Pro Ile Ile Thr 50 55 60

Asn Asp Arg Phe Thr Ser Gln Arg Tyr Asp Gln Gly Gly Asn Phe Thr 65 70 75 80

Ser Glu Met Ile Ile His Asn Val Glu Pro Ser Asp Ser Gly Asn Ile 85 90 95

Arg Cys Ser Leu Gln Asn Ser Arg Leu His Gly Ser Ala Tyr Leu Thr 100 105 110

Val Gln Val Met Gly Glu Leu Phe Ile Pro Ser Val Asn Leu Val Val 115 120 125

Ala Glu Asn Glu Pro Cys Glu Val Thr Cys Leu Pro Ser His Trp Thr 130 140

Arg Leu Pro Asp Ile Ser Trp Glu Leu Gly Leu Leu Val Ser His Ser 145 150 155 160

Ser Tyr Tyr Phe Val Pro Glu Pro Ser Asp Leu Gln Ser Ala Val Ser 165 170 175

Ile Leu Ala Leu Thr Pro Gln Ser Asn Gly Thr Leu Thr Cys Val Ala 180 185 190

Thr Trp Lys Ser Leu Lys Ala Arg Lys Ser Ala Thr Val Asn Leu Thr

| Val | Ile 210 | Arg | Cys | Pro | Gln | Asp 215 | Thr | Gly | Gly | Gly | Ile 220 | Asn | Ile | Pro | Gly | | |
|------------------------------|--------------|--------------------------|------------|------------|------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|----|---|
| Val 225 | Leu | Ser | Ser | Leu | Pro 230 | Ser | Leu | Gly | Phe | Ser 235 | Leu | Pro | Thr | Trp | Gly 240 | | |
| Lys | Val | Gly | Leu | Gly 245 | Leu | Ala | Gly | Thr | Met 250 | Leu | Leu | Thr | Pro | Thr 255 | Cys | | |
| Thr | Leu | Thr | Ile 260 | Arg | Cys | Cys | Cys | Cys 265 | Arg | Arg | Arg | Cys | Cys 270 | Gly | Cys | | |
| Asn | Cys | Cys 275 | Cys | Arg | Cys | Cys | Phe 280 | Cys | Cys | Arg | Arg | Lys 285 | Arg | Gly | Phe | | |
| Arg | Ile 290 | Gln | Phe | Gln | Lys | Lys 295 | Ser | Glu | Lys | Glu | Lys 300 | Thr | Asn | Lys | Glu | | |
| Thr 305 | Glu | Thr | Glu | Ser | Gly 310 | Asn | Glu | Asn | Ser | Gly 315 | Tyr | Asn | Ser | Asp | Glu 320 | | |
| Gln | Lys | Thr | Thr | Asp 325 | Thr | Ala | Ser | Leu | Pro 330 | Pro | Lys | Ser | Cys | Glu 335 | Ser | | |
| Ser | Asp | Pro | Glu 340 | Gln | Arg | Asn | Ser | Ser 345 | Cys | Gly | Pro | Pro | His 350 | Gln | Arg | | |
| Ala | Asp | Gln 355 | Arg | Pro | Pro | Arg | Pro 360 | Ala | Ser | His | Pro | Gln 365 | Ala | Ser | Phe | | |
| Asn | Leu 370 | Ala | Ser | Pro | Glu | Lys 375 | Val | Ser | Asn | Thr | Thr 380 | Val | Val | | | | |
| <210 <211 <212 <213 | l> 1 2> 1 | 3 L168 DNA Homo | sapi | iens | | | | | | | | | | | | | |
| <220 <220 <220 | 1> (| CDS (8). | . (116 | 55) | | | | | | | | | | | | | |
| <400 agt | | | | | gga Gly | | | | | | | | | | | 4 | 9 |
| | | | | | gtc Val 20 | | | | | | | | | | | 9 | 7 |
| | | | | | cgc Arg | | | | | | | | | | | 14 | 5 |

| | | | | 2.5 | | | | | 4.0 | | | | | 45 | | | |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-----|---|
| | | | , | 35 | | | | | 40 | ~+~ | a+ 5 | 200 | at a | | ccc | 193 | |
| Leu | Ile | atg Met | Trp 50 | Ala | Leu | Ser | gac Asp | Met 55 | Val | Val | Leu | Ser | Val 60 | agg Arg | Pro | 193 | |
| atg Met | gag Glu | ccc Pro 65 | atc Ile | atc Ile | acc Thr | aat Asn | gac Asp 70 | cgc Arg | ttc Phe | acc Thr | tct Ser | cag Gln 75 | agg Arg | tac Tyr | gac Asp | 241 | |
| cag Gln | ggc Gly 80 | Gly ggg | aac Asn | ttc Phe | acc Thr | tcg Ser 85 | gag Glu | atg Met | atc Ile | atc Ile | cac His 90 | aat Asn | gtg Val | gag Glu | ccc Pro | 289 | |
| agt Ser 95 | gat Asp | tcg Ser | ggg Gly | aac Asn | atc Ile 100 | aga Arg | tgc Cys | agc Ser | ctc Leu | cag Gln 105 | aac Asn | agt Ser | cgc Arg | ctg Leu | cat His 110 | 337 | |
| gga Gly | tct Ser | gct Ala | tac Tyr | ctt Leu 115 | acc Thr | gtc Val | caa Gln | gtt Val | atg Met 120 | gga Gly | gag Glu | ctg Leu | ttc Phe | att Ile 125 | ccc Pro | 385 | |
| agt Ser | gtt Val | aat Asn | ctt Leu 130 | gta Val | gtc Val | gct Ala | gag Glu | aat Asn 135 | gaa Glu | cct Pro | tgt Cys | gaa Glu | gtt Val 140 | act Thr | tgt Cys | 433 | |
| cta Leu | ccc Pro | tca Ser 145 | cac His | tgg Trp | acc Thr | tgg Trp | ctc Leu 150 | ccg Pro | gat Asp | att Ile | tcc Ser | tgg Trp 155 | gag Glu | ctc Leu | ggt Gly | 481 | |
| ctc Leu | ctg Leu 160 | gtc Val | agc Ser | cat His | tca Ser | agc Ser 165 | tat Tyr | tat Tyr | ttt Phe | gtt Val | ccg Pro 170 | gag Glu | ccc Pro | agc Ser | gac Asp | 529 | |
| ctt Leu 175 | caa Gln | agt Ser | gca Ala | gtg Val | agc Ser 180 | atc Ile | ctg Leu | gct Ala | ctg Leu | acc Thr 185 | cca Pro | cag Gln | agc Ser | aat Asn | ggg Gly 190 | 577 | |
| act Thr | ttg Leu | act Thr | tgc Cys | gtg Val 195 | gct Ala | acc Thr | tgg Trp | aag Lys | agc Ser 200 | ctg Leu | aag Lys | gcc Ala | cgc Arg | aag Lys 205 | tct Ser | 625 | |
| gca Ala | act Thr | gta Val | aat Asn 210 | ctc Leu | act Thr | gtg Val | att Ile | cgg Arg 215 | tgt Cys | ccc Pro | caa Gln | gac Asp | act Thr 220 | gga Gly | ggt Gly | 673 | |
| ggt Gly | att Ile | aat Asn 225 | att Ile | cca Pro | ggt Gly | gta Val | tta Leu 230 | tca Ser | agt Ser | tta Leu | ccg Pro | agt Ser 235 | tta Leu | ggt Gly | ttt Phe | 721 | |
| tca Ser | ttg Leu 240 | cct Pro | act Thr | tgg Trp | ggc Gly | aaa Lys 245 | gtt Val | gga Gly | ctt Leu | gga Gly | cta Leu 250 | gca Ala | ggc Gly | acc Thr | atg Met | 769 | |
| ctt Leu 255 | ctg Leu | acg Thr | ccg Pro | acg Thr | tgt Cys 260 | act Thr | ctt Leu | aca Thr | ata Ile | cgc Arg 265 | tgc Cys | tgc Cys | tgc Cys | tgc Cys | cgc Arg 270 | 817 | |
| cgt Arg | cgt Arg | tgt Cys | tgt Cys | ggc Gly 275 | tgc Cys | aac Asn | tgc Cys | tgc Cys | tgc Cys 280 | cgt Arg | tgt Cys | tgt Cys | ttc Phe | tgc Cys 285 | tgt Cys | 865 | 5 |
| aga Arg | aga Arg | aaa Lys | aga Arg | gga Gly | ttt Phe | cgt Arg | att Ile | caa Gln | ttt Phe | caa Gln | aag Lys | aaa Lys | tct Ser | gaa Glu | aaa Lys | 913 | |

| | 290 | | : | 295 | | | | 300 | | | |
|---|--|---|--|--|--------------------------------|--------------------------------|--------------------|--------------------------------|-------------------------|--------------------|------|
| gag aag aca Glu Lys Thr 305 | Asn Lys | | | | | | | | | | 961 |
| ggc tac aat Gly Tyr Asn 320 | | | | | | | | | | | 1009 |
| ccc aaa tcc Pro Lys Ser 335 | tgt gaa Cys Glu | tcc agt Ser Ser 340 | gat (Asp | cct gaa Pro Glu | caa Gln 345 | aga Arg | aac Asn | agt Ser | agc Ser | tgt Cys 350 | 1057 |
| ggc cct cct Gly Pro Pro | | | | | | | | | | | 1105 |
| cat cca cag His Pro Glr | | | Leu | | | | | | | | 1153 |
| aca act gta Thr Thr Val 385 | Val | | | | | | | | | | 1168 |
| <210> 4 <211> 386 <212> PRT <213> Homo | sapiens | | | | | | | | | | |
| | | | | | | | | | | | |
| <400> 4 | | | | | | | | | | | |
| <400> 4 Met Val Ala 1 | Gly Ala 5 | Met Glu | Asn Z | Arg Asp 10 | Pro | Pro | Gly | Ser | Gly 15 | Ser | |
| Met Val Ala | 5 | | Pro (| 10 | | | | | 15 | | |
| Met Val Ala 1 | 5 Val Ile 20 | Glu Gly | Pro (| 10 Gln Asn 25 | Ala | Arg | Val | Leu 30 | 15 Lys | Gly | |
| Met Val Ala 1 Gly Asn Glu Ser Gln Ala | 5 Val Ile 20 Arg Phe | Glu Gly Asn Cys | Pro (| 10 Gln Asn 25 Val Ser | Ala Gln | Arg Gly | Val Trp 45 | Leu 30 Lys | 15 Lys Leu | Gly Ile | |
| Met Val Ala 1 Gly Asn Glu Ser Gln Ala 35 | Val Ile 20 Arg Phe Leu Ser | Glu Gly Asn Cys Asp Met 55 | Pro of the state o | 10 Gln Asn 25 Val Ser Val Leu | Ala Gln Ser | Arg Gly Val 60 | Val Trp 45 | Leu 30 Lys Pro | 15 Lys Leu Met | Gly Ile Glu | |
| Met Val Ala Gly Asn Glu Ser Gln Ala 35 Met Trp Ala 50 | Val Ile 20 Arg Phe Leu Ser | Glu Gly Asn Cys Asp Met 55 Asp Arg 70 | Pro (| Gln Asn 25 Val Ser Val Leu Thr Ser | Ala Gln Ser Gln 75 | Arg Gly Val 60 Arg | Val Trp 45 Arg | Leu 30 Lys Pro | Lys Leu Met | Gly Ile Glu Gly 80 | |
| Met Val Ala Gly Asn Glu Ser Gln Ala 35 Met Trp Ala 50 Pro Ile Ile | Val Ile 20 Arg Phe Leu Ser Thr Asn | Glu Gly Asn Cys Asp Met 55 Asp Arg 70 Glu Met | Pro Control of the Co | 10 Gln Asn 25 Val Ser Val Leu Thr Ser Ile His 90 | Ala Gln Ser Gln 75 Asn | Arg Gly Val 60 Arg | Val Trp 45 Arg Tyr | Leu 30 Lys Pro Asp | Lys Leu Met Gln Ser 95 | Gly Glu Gly 80 Asp | |

370

Asn Leu Val Val Ala Glu Asn Glu Pro Cys Glu Val Thr Cys Leu Pro Ser His Trp Thr Trp Leu Pro Asp Ile Ser Trp Glu Leu Gly Leu Leu 155 Val Ser His Ser Ser Tyr Tyr Phe Val Pro Glu Pro Ser Asp Leu Gln Ser Ala Val Ser Ile Leu Ala Leu Thr Pro Gln Ser Asn Gly Thr Leu Thr Cys Val Ala Thr Trp Lys Ser Leu Lys Ala Arg Lys Ser Ala Thr Val Asn Leu Thr Val Ile Arg Cys Pro Gln Asp Thr Gly Gly Ile 215 Asn Ile Pro Gly Val Leu Ser Ser Leu Pro Ser Leu Gly Phe Ser Leu Pro Thr Trp Gly Lys Val Gly Leu Gly Leu Ala Gly Thr Met Leu Leu Thr Pro Thr Cys Thr Leu Thr Ile Arg Cys Cys Cys Arg Arg Arg Cys Cys Gly Cys Asn Cys Cys Cys Arg Cys Cys Phe Cys Cys Arg Arg Lys Arg Gly Phe Arg Ile Gln Phe Gln Lys Lys Ser Glu Lys Glu Lys 300 Thr Asn Lys Glu Thr Glu Thr Glu Ser Gly Asn Glu Asn Ser Gly Tyr Asn Ser Asp Glu Gln Lys Thr Thr Asp Thr Ala Ser Leu Pro Pro Lys Ser Cys Glu Ser Ser Asp Pro Glu Gln Arg Asn Ser Ser Cys Gly Pro Pro His Gln Arg Ala Asp Gln Arg Pro Pro Arg Pro Ala Ser His Pro 355

Gln Ala Ser Phe Asn Leu Ala Ser Pro Glu Lys Val Ser Asn Thr Thr

380

375

Val Val 385 <210> 5 <211> 1240 <212> DNA <213> Homo sapiens <220> <221> CDS <222> (80)..(1237) <400> aggtgtgagt ccagccaaca gtgtggatca gtttcctagg ctgccataac aaagcaccat 60 aacctggtgg cttagaaca atg gaa agg cat ttg ctc acg gtt cca gaa gct 112 Met Glu Arg His Leu Leu Thr Val Pro Glu Ala gta ggt tct ggg tct ggt aat gaa gtc ata gaa ggc ccc cag aat gca 160 Val Gly Ser Gly Ser Gly Asn Glu Val Ile Glu Gly Pro Gln Asn Ala aca gtc ctg aag ggc tcc cag gct cgc ttc aac tgc acc gtc tcc cag 208 Thr Val Leu Lys Gly Ser Gln Ala Arg Phe Asn Cys Thr Val Ser Gln ggc tgg aag ctc atc atg tgg gct ctc agt gac atg gtg gtg cta agc 256 Gly Trp Lys Leu Ile Met Trp Ala Leu Ser Asp Met Val Val Leu Ser gtc agg ecc atg gag ecc atc atc acc aat gac egc ttc acc tct cag 304 Val Arg Pro Met Glu Pro Ile Ile Thr Asn Asp Arg Phe Thr Ser Gln agg tac gac cag ggc ggg aac ttc acc tcg gag atg atc atc cac aat 352 Arg Tyr Asp Gln Gly Gly Asn Phe Thr Ser Glu Met Ile Ile His Asn 80 85 gtg gag ccc agt gat tcg ggg aac atc aga tgc agc ctc cag aac agt 400 Val Glu Pro Ser Asp Ser Gly Asn Ile Arg Cys Ser Leu Gln Asn Ser 95 cgc ctg cat gga tct gct tac ctt acc gtc caa gtt atg gga gag ctg 448 Arg Leu His Gly Ser Ala Tyr Leu Thr Val Gln Val Met Gly Glu Leu 110 115 ttc att ccc agt gtt aat ctt gta gtc gct gag aat gaa cct tgt gaa 496 Phe Ile Pro Ser Val Asn Leu Val Val Ala Glu Asn Glu Pro Cys Glu gtt act tgt cta ccc tca cac tgg acc cgg ctc ccg gat att tcc tgg 544 Val Thr Cys Leu Pro Ser His Trp Thr Arg Leu Pro Asp Ile Ser Trp 150 gag ctc ggt ctc ctg gtc agc cat tca agc tat tat ttt gtt ccg gag 592 Glu Leu Gly Leu Leu Val Ser His Ser Ser Tyr Tyr Phe Val Pro Glu 160 165 ccc agc gac ctt caa agt gca gtg agc atc ctg gct ctg acc cca cag 640 Pro Ser Asp Leu Gln Ser Ala Val Ser Ile Leu Ala Leu Thr Pro Gln

| 175 | 1 | 180 | 185 | |
|---|---------------------------------------|---|---|------------|
| agc aat ggg act ttg Ser Asn Gly Thr Leu 190 | act tgc gtg g Thr Cys Val A 195 | gct acc tgg aag Ala Thr Trp Lys | agc ctg aag gcc Ser Leu Lys Ala 200 | e 688 a |
| cgc aag tct gca act Arg Lys Ser Ala Thr 205 | | | | |
| act gga ggt ggt att Thr Gly Gly Gly Ile 220 | | | | : |
| tta ggt ttt tca ttg Leu Gly Phe Ser Leu 240 | Pro Thr Trp C | | | |
| ggc acc atg ctt ctg Gly Thr Met Leu Leu 255 | Thr Pro Thr C | tgt act ctt aca Cys Thr Leu Thr 260 | ata cgc tgc tgc Ile Arg Cys Cys 265 | 880 |
| tgc tgc cgc cgt cgt Cys Cys Arg Arg Arg 270 | | | | |
| ttc tgc tgt aga aga Phe Cys Cys Arg Arg 285 | | | | |
| tct gaa aaa gag aag Ser Glu Lys Glu Lys 300 | aca aac aaa g Thr Asn Lys G 305 | gaa act gag aca Glu Thr Glu Thr 310 | gaa agt gga aat Glu Ser Gly Asr 315 | 1 |
| gaa aac tcc ggc tac Glu Asn Ser Gly Tyr 320 | | | | |
| tct ctc cct ccc aaa Ser Leu Pro Pro Lys 335 | Ser Cys Glu S | ccc agt gat cct Ser Ser Asp Pro 340 | gaa caa aga aac Glu Gln Arg Asr 345 | 1120 |
| agt agc tgt ggc cct Ser Ser Cys Gly Pro 350 | cct cac cag c Pro His Gln A 355 | egg get gat caa Arg Ala Asp Gln | cgt cca ccc agg Arg Pro Pro Arg 360 | 1168 |
| cca gca agt cat cca Pro Ala Ser His Pro 365 | cag gct tct t Gln Ala Ser P 370 | ctt aat ctg gcc Phe Asn Leu Ala 375 | agt cct gag aag Ser Pro Glu Lys | 1216 |
| gtc agt aat aca act Val Ser Asn Thr Thr 380 | gta gta tag Val Val 385 | | | 1240 |
| <210> 6 <211> 386 <212> PRT <213> Homo sapiens | | | | |
| <pre><400> 6 Met Glu Arg His Leu 1</pre> | Leu Thr Val P | | | |
| 1 5 | | 10 | 15 | |

Gly Asn Glu Val Ile Glu Gly Pro Gln Asn Ala Thr Val Leu Lys Gly 20 25 30

Ser Gln Ala Arg Phe Asn Cys Thr Val Ser Gln Gly Trp Lys Leu Ile 35 40 45

Met Trp Ala Leu Ser Asp Met Val Val Leu Ser Val Arg Pro Met Glu 50 60

Pro Ile Ile Thr Asn Asp Arg Phe Thr Ser Gln Arg Tyr Asp Gln Gly 65 70 75 80

Gly Asn Phe Thr Ser Glu Met Ile Ile His Asn Val Glu Pro Ser Asp 85 90 95

Ser Gly Asn Ile Arg Cys Ser Leu Gln Asn Ser Arg Leu His Gly Ser 100 105 110

Ala Tyr Leu Thr Val Gln Val Met Gly Glu Leu Phe Ile Pro Ser Val 115 120 125

Asn Leu Val Val Ala Glu Asn Glu Pro Cys Glu Val Thr Cys Leu Pro 130 135 140

Ser His Trp Thr Arg Leu Pro Asp Ile Ser Trp Glu Leu Gly Leu Leu 145 150 155 160

Val Ser His Ser Ser Tyr Tyr Phe Val Pro Glu Pro Ser Asp Leu Gln
165 170 175

Ser Ala Val Ser Ile Leu Ala Leu Thr Pro Gln Ser Asn Gly Thr Leu 180 185 190

Thr Cys Val Ala Thr Trp Lys Ser Leu Lys Ala Arg Lys Ser Ala Thr 195 200 205

Val Asn Leu Thr Val Ile Arg Cys Pro Gln Asp Thr Gly Gly Ile 210 215 220

Asn Ile Pro Gly Val Leu Ser Ser Leu Pro Ser Leu Gly Phe Ser Leu 225 230 235 240

Pro Thr Trp Gly Lys Val Gly Leu Gly Leu Ala Gly Thr Met Leu Leu 245 250 255

Thr Pro Thr Cys Thr Leu Thr Ile Arg Cys Cys Cys Cys Arg Arg Arg 260 265 270

| 275 | Cys Asn | Cys | | Cys 280 | Arg | Сув | Cys | Phe | Cys 285 | Суз | Arg | Arg | |
|---|---|--------------------------|--------------------------|----------------------------|--------------------------------|---------------------------------------|--|--------------------------|---------------------------------------|----------------------------|---------------------------------------|--------------------------|----------|
| Lys Arg Gly 290 | Phe Arg | | Gln 295 | Phe | Gln | Lys | Lys | Ser 300 | Glu | Lys | Glu | Lys | |
| Thr Asn Lys 305 | Glu Thr | Glu 310 | Thr | Glu | Ser | Gly | Asn 315 | Glu | Asn | Ser | Gly | Tyr 320 | |
| Asn Ser Asp | Glu Gln 325 | Lys ' | Thr | Thr | Glu | Thr 330 | Ala | Ser | Leu | Pro | Pro 335 | Lys | |
| Ser Cys Glu | Ser Ser 340 | Asp : | Pro | Glu | Gln 345 | Arg | Asn | Ser | Ser | Cys 350 | Gly | Pro | |
| Pro His Gln 355 | Arg Ala | Asp (| | Arg 360 | Pro | Pro | Arg | Pro | Ala 365 | Ser | His | Pro | |
| Gln Ala Ser 370 | Phe Asn | | Ala 375 | Ser | Pro | Glu | Lys | Val 380 | Ser | Asn | Thr | Thr | |
| Val Val 385 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| <210> 7 <211> 1139 <212> DNA <213> Homo | sapiens | | | | | | | | | | | | |
| <211> 1139 <212> DNA <213> Homo <220> <221> CDS | sapiens .(1131) | | | | | | | | | | | | |
| <211> 1139 <212> DNA <213> Homo <220> <221> CDS | .(1131) gga gcc | atg (| gaa . Glu . | aat Asn | aga Arg | gac Asp 10 | cca Pro | ccc Pro | ggt Gly | tct Ser | ggg Gly 15 | tct Ser | 48 |
| <pre><211> 1139 <212> DNA <213> Homo <220> <221> CDS <222> (1). <400> 7 atg gtg gca Met Val Ala</pre> | gga gcc Gly Ala 5 gtc ata | Met (| Glu . | Asn | Arg | Asp 10 | Pro gca | Pro aga | Gly | Ser ctg | Gly 15 | Ser ggc | 48 96 |
| <pre><211> 1139 <212> DNA <213> Homo <220> <221> CDS <222> (1). <400> 7 atg gtg gca Met Val Ala 1 ggt aat gaa</pre> | gga gcc Gly Ala 5 gtc ata Val Ile 20 cgc ttc | gaa Glu | ggc Gly tgc Cys | Asn ccc Pro | Arg caa Gln 25 gtc | Asp 10 aat Asn | Pro gca Ala cag | Pro aga Arg ggc | Gly gtc Val tgg | ctg Leu 30 | Gly 15 aag Lys | ggc Gly atc | |
| <pre><211> 1139 <212> DNA <213> Homo <220> <221> CDS <222> (1). <400> 7 atg gtg gca Met Val Ala 1 ggt aat gaa Gly Asn Glu tcc cag gct Ser Gln Ala</pre> | gga gcc Gly Ala 5 gtc ata Val Ile 20 cgc ttc Arg Phe | gaa Glu Gaac Asn Gac Asp | ggc Gly tgc Cys | Asn ccc Pro acc Thr 40 gtg | caa Gln 25 gtc Val | Asp 10 aat Asn tcc Ser | Pro gca Ala cag Gln agc | Pro aga Arg ggc Gly gtc | Gly gtc Val tgg Trp 45 | Ser ctg Leu 30 aag Lys ccc | Gly 15 aag Lys ctc Leu | ggc Gly atc Ile | 96 |

| GJÀ aaa | aac Asn | ctc Leu | acc Thr | tcg Ser 85 | gag Glu | atg Met | atc Ile | atc Ile | cac His 90 | aat Asn | gtg Val | gag Glu | ccc Pro | agt Ser 95 | gat Asp | 288 |
|-------------------|------------------------|------------|-------------------|-------------------|-------------------|-------------------|------------|-------------------|-------------------|-------------------|-------------------|------------|-------------------|-------------------|-------------------|------|
| tcg Ser | Gl ^à aaa | aac Asn | atc Ile 100 | aga Arg | tgc Cys | agc Ser | ctc Leu | cag Gln 105 | aac Asn | agt Ser | cgc Arg | ctg Leu | cat His 110 | gga Gly | tct Ser | 336 |
| | | | | | | | | gga Gly | | | | | | | | 384 |
| | | | | | | | | cct Pro | | | | | | | | 432 |
| | | | | | | | | att Ile | | | | | | | | 480 |
| gtc Val | agc Ser | cat His | tca Ser | agc Ser 165 | tat Tyr | tat Tyr | ttt Phe | gtt Val | ccg Pro 170 | gag Glu | ccc Pro | agc Ser | gac Asp | ctt Leu 175 | caa Gln | 528 |
| | | | | | | | | acc Thr 185 | | | | | | | ttg Leu | 576 |
| | | | | | | | | ctg Leu | | | | | | | | 624 |
| gta Val | aat Asn 210 | ctc Leu | act Thr | gtg Val | att Ile | cgg Arg 215 | tgt Cys | ccc Pro | caa Gln | gac Asp | act Thr 220 | gga Gly | ggt Gly | ggt Gly | att Ile | 672 |
| | | | | | | | | tta Leu | | | | | | | | 720 |
| | | | | | | | | gga Gly | | | | | | | | 768 |
| | | | | | | | | cgc Arg 265 | | | | | | | | 816 |
| | | | | | | | | cgt Arg | | | | | | | | 864 |
| aaa Lys | aga Arg 290 | gga Gly | aat Asn | ctg Leu | aaa Lys | aag Lys 295 | aga Arg | aga Arg | caa Gln | aca Thr | aag Lys 300 | aaa Lys | ctg Leu | aga Arg | cag Gln | 912 |
| aaa Lys 305 | gtg Val | gaa Glu | atg Met | aaa Lys | act Thr 310 | ccg Pro | gct Ala | aca Thr | att Ile | cag Gln 315 | atg Met | aac Asn | aaa Lys | aga Arg | cca Pro 320 | 960 |
| cag Gln | aca Thr | ccg Pro | ctt Leu | ctc Leu 325 | tcc Ser | ctc Leu | cca Pro | aat Asn | cct Pro 330 | gtg Val | aat Asn | cca Pro | gtg Val | atc Ile 335 | ctg Leu | 1008 |

| aac Asn | aaa Lys | gaa Glu | aca Thr 340 | gta Val | gct Ala | gtg Val | gcc Ala | ctc Leu 345 | ctc Leu | acc Thr | agc Ser | ggg Gly | ctg Leu 350 | atc Ile | aac Asn | 1056 |
|------------------------------|-------------------|------------------------|-------------------|------------|------------|-------------------|-------------------|-------------------|------------|------------|------------|-------------------|-------------------|------------|------------|------|
| gtc Val | cac His | cca Pro 355 | ggc Gly | cag Gln | caa Gln | gtc Val | atc Ile 360 | cac His | agg Arg | ctt Leu | ctt Leu | tta Leu 365 | atc Ile | tgg Trp | cca Pro | 1104 |
| gtc Val | ctg Leu 370 | aga Arg | agg Arg | tca Ser | gta Val | ata Ile 375 | caa Gln | ctg Leu | tagt | ataa | a. | | | | | 1139 |
| <210 <211 <212 <213 | L> 3 2> F | 3 77 PRT Homo | sapi | iens | | | | | | | | | | | | |
| <400 |)> 8 | 3 | | | | | | | | | | | | | | |
| Met 1 | Val | Ala | Gly | Ala 5 | Met | Glu | Asn | Arg | Asp 10 | Pro | Pro | Gly | Ser | Gly 15 | Ser | |
| Gly | Asn | Glu | Val 20 | Ile | Glu | Gly | Pro | Gln 25 | Asn | Ala | Arg | Val | Leu 30 | Lys | Gly | |
| Ser | Gln | Ala 35 | Arg | Phe | Asn | Cys | Thr 40 | Val | Ser | Gln | Gly | Trp 45 | Lys | Leu | Ile | |
| Met | Trp 50 | Ala | Leu | Ser | Asp | Met 55 | Val | Val | Leu | Ser | Val 60 | Arg | Pro | Met | Glu | |
| Pro 65 | Ile | Ile | Thr | Asn | Asp 70 | Arg | Phe | Thr | Ser | Gln 75 | Arg | Tyr | Asp | Gln | Gly 80 | |
| Gly | Asn | Leu | Thr | Ser 85 | Glu | Met | Ile | Ile | His 90 | Asn | Val | Glu | Pro | Ser 95 | Asp | |
| Ser | Gly | Asn | Ile 100 | Arg | Cys | Ser | Leu | Gln 105 | Asn | Ser | Arg | Leu | His 110 | Gly | Ser | |
| Ala | Tyr | Leu 115 | Thr | Val | Gln | Val | Met 120 | Gly | Glu | Leu | Phe | Ile 125 | Pro | Ser | Val | |
| Asn | Leu 130 | Val | Val | Ala | Glu | Asn 135 | | Pro | Cys | Glu | Val 140 | Thr | Cys | Leu | Pro | |
| Ser 145 | | Trp | Thr | Arg | Leu 150 | | Asp | Ile | Ser | Trp 155 | | Leu | Gly | Leu | Leu 160 | |
| Val | Ser | His | Ser | Ser 165 | | Tyr | Phe | · Val | Pro 170 | | Pro | Ser | Asp | Leu 175 | Gln | |

Ser Ala Val Ser Ile Leu Ala Leu Thr Pro Gln Ser Asn Gly Thr Leu

Thr Cys Val Ala Thr Trp Lys Ser Leu Lys Ala Arg Lys Ser Ala Thr 200

Val Asn Leu Thr Val Ile Arg Cys Pro Gln Asp Thr Gly Gly Gly Ile

Asn Ile Pro Gly Val Leu Ser Ser Leu Pro Ser Leu Gly Phe Ser Leu 235 225 230

Pro Thr Trp Gly Lys Val Gly Leu Gly Leu Ala Gly Thr Met Leu Leu

Thr Pro Thr Cys Thr Leu Thr Ile Arg Cys Cys Cys Arg Arg Arg

Cys Cys Gly Cys Asn Cys Cys Cys Arg Cys Cys Phe Cys Cys Arg Arg

Lys Arg Gly Asn Leu Lys Lys Arg Arg Gln Thr Lys Lys Leu Arg Gln 295

Lys Val Glu Met Lys Thr Pro Ala Thr Ile Gln Met Asn Lys Arg Pro 310 315 320

Gln Thr Pro Leu Leu Ser Leu Pro Asn Pro Val Asn Pro Val Ile Leu 325

Asn Lys Glu Thr Val Ala Val Ala Leu Leu Thr Ser Gly Leu Ile Asn

Val His Pro Gly Gln Gln Val Ile His Arg Leu Leu Leu Trp Pro

Val Leu Arg Arg Ser Val Ile Gln Leu 370 375

<210> 9

<211> 1195 <212> DNA

<213> Mus musculus

<220>

<221> CDS

(53)..(1162) <222>

gtgaacgaga tacagagatt tacctgcctg aggtaaggaa gatcatgctg ag atg gag Met Glu

| | | | | | | | | | | | | | | 1 | | | |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|----|-----|
| ggc Gly | agc Ser | tgg Trp 5 | aga Arg | gat Asp | gtc Val | ctg Leu | gct Ala 10 | gtg Val | ctg Leu | gtc Val | atc Ile | ctg Leu 15 | gct Ala | cag Gln | ctg Leu | 10 | 6 |
| aca Thr | gct Ala 20 | tcc Ser | gga Gly | tcc Ser | agt Ser | tat Tyr 25 | cag Gln | atc Ile | ata Ile | gaa Glu | ggt Gly 30 | cct Pro | cag Gln | aat Asn | gta Val | 15 | 4 |
| aca Thr 35 | gtc Val | cta Leu | aag Lys | gac Asp | tca Ser 40 | gag Glu | gct Ala | cac His | ttc Phe | aac Asn 45 | tgc Cys | acc Thr | gtg Val | act Thr | cac His 50 | 20 | 2 |
| ggc Gly | tgg Trp | aag Lys | ctt Leu | ctc Leu 55 | atg Met | tgg Trp | act Thr | ctt Leu | aac Asn 60 | caa Gln | atg Met | gtg Val | gtg Val | ctg Leu 65 | agt Ser | 25 | 0 |
| ctc Leu | acc Thr | acc Thr | caa Gln 70 | gga Gly | ccc Pro | atc Ile | atc Ile | acc Thr 75 | aac Asn | aac Asn | cgc Arg | ttc Phe | acc Thr 80 | tat Tyr | gcc Ala | 29 | 8 |
| agt Ser | tac Tyr | aac Asn 85 | agc Ser | act Thr | gac Asp | agc Ser | ttc Phe 90 | atc Ile | tcg Ser | gag Glu | ttg Leu | atc Ile 95 | atc Ile | cat His | gat Asp | 34 | 16 |
| gtg Val | cag Gln 100 | ccc Pro | agt Ser | gac Asp | tcg Ser | gga Gly 105 | tcc Ser | gtg Val | caa Gln | tgc Cys | agc Ser 110 | ctg Leu | cag Gln | aac Asn | agc Ser | 39 | 4 |
| cat His 115 | ggg Gly | ttt Phe | gga Gly | tct Ser | gcc Ala 120 | ttc Phe | ctc Leu | tca Ser | gtg Val | caa Gln 125 | gtc Val | atg Met | ggg ggg | acc Thr | ctg Leu 130 | 44 | 12 |
| aac Asn | att Ile | cct Pro | agc Ser | aac Asn 135 | aac Asn | ctt Leu | ata Ile | gtc Val | act Thr 140 | gag Glu | ggt Gly | gaa Glu | ccc Pro | tgt Cys 145 | aat Asn | 49 | 0 0 |
| gtg Val | act Thr | tgc Cys | tat Tyr 150 | gcc Ala | gtg Val | ggc Gly | tgg Trp | acc Thr 155 | tca Ser | ctc Leu | ccg Pro | gat Asp | att Ile 160 | tcc Ser | tgg Trp | 53 | 8 8 |
| gag Glu | ctt Leu | gag Glu 165 | gtt Val | ccc Pro | gta Val | agc Ser | cat His 170 | tcg Ser | agt Ser | tac Tyr | aat Asn | tcc Ser 175 | ttt Phe | ctg Leu | gag Glu | 58 | 36 |
| ccg Pro | ggc Gly 180 | aac Asn | ttt Phe | atg Met | agg Arg | gtc Val 185 | ttg Leu | agt Ser | gtc Val | ctg Leu | gac Asp 190 | ctc Leu | aca Thr | cca Pro | ctg Leu | 63 | 34 |
| ggc Gly 195 | Asn | Gly | acc Thr | ttg Leu | act Thr 200 | tgt Cys | gtg Val | gca Ala | gag Glu | ctg Leu 205 | aag Lys | gac Asp | ttg Leu | cag Gln | gcc Ala 210 | 68 | 32 |
| agc Ser | aag Lys | tcc Ser | tta Leu | act Thr 215 | gtc Val | aac Asn | ctg Leu | act Thr | gtg Val 220 | Val | cag Gln | cct Pro | cca Pro | cct Pro 225 | gac Asp | 73 | 30 |
| agt Ser | att Ile | gga Gly | gag Glu 230 | gaa Glu | ggc Gly | cca Pro | gca Ala | ctg Leu 235 | ccg Pro | acc Thr | tgg Trp | gcc Ala | atc Ile 240 | Ile | ctg Leu | 77 | 78 |
| ctg Leu | gca Ala | gtg Val | gcc Ala | ttt Phe | tcc Ser | ttg Leu | ctc Leu | ttg Leu | atc Ile | ctg Leu | atc Ile | att Ile | gtt Val | ttg Leu | att Ile | 82 | 26 |

| 245 | | 250 | 255 | |
|---|---|---|---|------|
| ata ata ttc t Ile Ile Phe C 260 | gt tgc tgt tg Ys Cys Cys Cys 26 | Ala Ser Arg Arg | gaa aag gaa gaa tct Glu Lys Glu Glu Ser 270 | 874 |
| act tat caa a Thr Tyr Gln A 275 | at gaa ata agg sn Glu Ile Arg 280 | g aaa tct gca aac g Lys Ser Ala Asn 285 | atg agg aca aac aaa Met Arg Thr Asn Lys 290 | 922 |
| gca gat ccg g Ala Asp Pro G | ag aca aag tta lu Thr Lys Lev 295 | a aaa agt gga aag 1 Lys Ser Gly Lys 300 | gaa aac tac ggg tac Glu Asn Tyr Gly Tyr 305 | 970 |
| Ser Ser Asp G | ag gca aag gct lu Ala Lys Ala 10 | gca cag act gca Ala Gln Thr Ala 315 | tct ctc cct cct aaa Ser Leu Pro Pro Lys 320 | 1018 |
| tct gct gaa g Ser Ala Glu V 325 | tc agc ctt cca al Ser Leu Pro | gaa aaa cgc agc Glu Lys Arg Ser 330 | agt agc ctt cct tat Ser Ser Leu Pro Tyr 335 | 1066 |
| cag gaa ctc a Gln Glu Leu A 340 | at aaa cat cag sn Lys His Glr 345 | Pro Gly Pro Ala | act cat cca cgg gtt Thr His Pro Arg Val 350 | 1114 |
| tcc ttt gac a Ser Phe Asp I 355 | tc gcc agt cct le Ala Ser Pro 360 | cag aag gtc aga Gln Lys Val Arg 365 | aat gtg act tta gtg Asn Val Thr Leu Val 370 | 1162 |
| taataaagac tt | ctcatgac tgtac | ttggt gca | | 1195 |
| <210> 10 <211> 370 <212> PRT <213> Mus mus | sculus | | | |
| <400> 10 | | | | |
| Met Glu Gly So | er Trp Arg Asp 5 | Val Leu Ala Val 1 10 | Leu Val Ile Leu Ala 15 | |
| Gln Leu Thr Al | | Ser Tyr Gln Ile 1 25 | Ile Glu Gly Pro Gln 30 | |
| | | | | |
| Asn Val Thr Va | al Leu Lys Asp | Ser Glu Ala His I 40 | Phe Asn Cys Thr Val 45 | |
| 35 | | 40 Met Trp Thr Leu A | Phe Asn Cys Thr Val | |
| Thr His Gly To | rp Lys Leu Leu 55 | Met Trp Thr Leu A | Phe Asn Cys Thr Val 45 Asn Gln Met Val Val | |

His Asp Val Gln Pro Ser Asp Ser Gly Ser Val Gln Cys Ser Leu Gln
100 105 110

Asn Ser His Gly Phe Gly Ser Ala Phe Leu Ser Val Gln Val Met Gly 115 120 125

Thr Leu Asn Ile Pro Ser Asn Asn Leu Ile Val Thr Glu Gly Glu Pro 130 140

Cys Asn Val Thr Cys Tyr Ala Val Gly Trp Thr Ser Leu Pro Asp Ile 145 150 155 160

Ser Trp Glu Leu Glu Val Pro Val Ser His Ser Ser Tyr Asn Ser Phe 165 170 175

Leu Glu Pro Gly Asn Phe Met Arg Val Leu Ser Val Leu Asp Leu Thr 180 185 190

Pro Leu Gly Asn Gly Thr Leu Thr Cys Val Ala Glu Leu Lys Asp Leu 195 200 205

Gln Ala Ser Lys Ser Leu Thr Val Asn Leu Thr Val Val Gln Pro Pro 210 215 220

Pro Asp Ser Ile Gly Glu Glu Gly Pro Ala Leu Pro Thr Trp Ala Ile 225 230 235 240

Ile Leu Leu Ala Val Ala Phe Ser Leu Leu Leu Ile Leu Ile Val 245 250 255

Leu Ile Ile Phe Cys Cys Cys Cys Ala Ser Arg Arg Glu Lys Glu 260 265 270

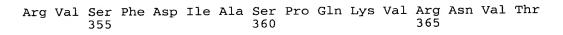
Glu Ser Thr Tyr Gln Asn Glu Ile Arg Lys Ser Ala Asn Met Arg Thr 275 280 285

Asn Lys Ala Asp Pro Glu Thr Lys Leu Lys Ser Gly Lys Glu Asn Tyr 290 295 300

Gly Tyr Ser Ser Asp Glu Ala Lys Ala Ala Gln Thr Ala Ser Leu Pro 305 310 315 320

Pro Lys Ser Ala Glu Val Ser Leu Pro Glu Lys Arg Ser Ser Ser Leu 325 330 335

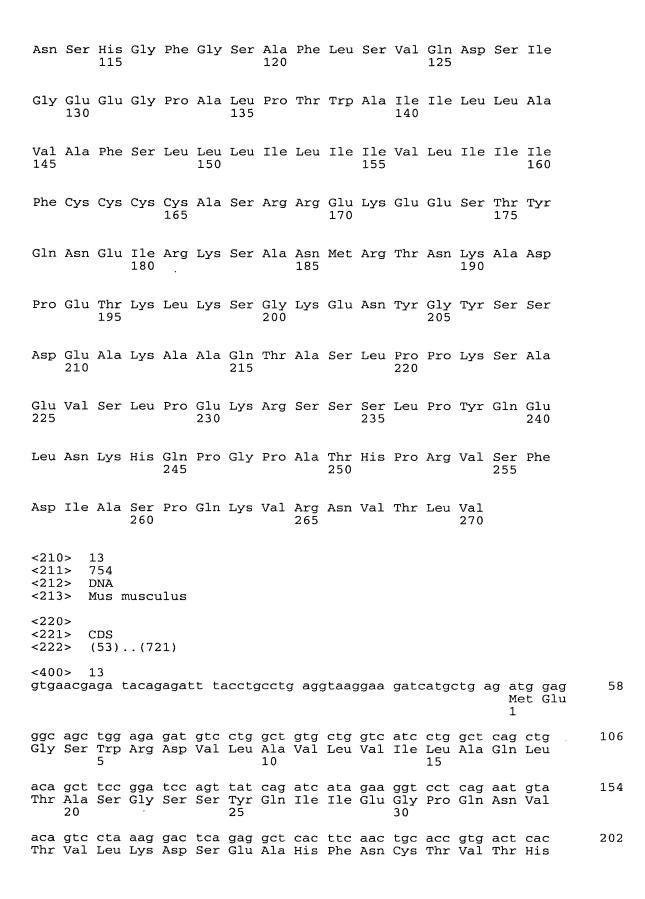
Pro Tyr Gln Glu Leu Asn Lys His Gln Pro Gly Pro Ala Thr His Pro 340 345 350



Leu Val

| 370 | | | | | |
|---|-----------------------------------|-------------------------------|-----------------------------------|-----------------------------------|-------------------------------|
| <210> 11 <211> 895 <212> DNA <213> Mus m | usculus | | | | |
| <220> <221> CDS <222> (53). | . (862) | | | | |
| <400> 11 gtgaacgaga t | acagagatt ta | acctgcctg | aggtaaggaa | gatcatgctg a | g atg gag 58 Met Glu 1 |
| ggc agc tgg Gly Ser Trp 5 | aga gat gtc Arg Asp Val | ctg gct g Leu Ala V 10 | gtg ctg gtc /al Leu Val | atc ctg gct Ile Leu Ala 15 | cag ctg 106 Gln Leu |
| aca gct tcc Thr Ala Ser 20 | gga tcc agt Gly Ser Ser | tat cag a Tyr Gln I 25 | atc ata gaa Ile Ile Glu | ggt cct cag Gly Pro Gln 30 | aat gta 154 Asn Val |
| aca gtc cta Thr Val Leu 35 | aag gac tca Lys Asp Ser 40 | gag gct c Glu Ala H | cac ttc aac His Phe Asn 45 | tgc acc gtg Cys Thr Val | act cac 202 Thr His 50 |
| ggc tgg aag Gly Trp Lys | ctt ctc atg Leu Leu Met 55 | tgg act c Trp Thr L | ctt aac caa Leu Asn Gln 60 | atg gtg gtg Met Val Val | ctg agt 250 Leu Ser 65 |
| ctc acc acc Leu Thr Thr | caa gga ccc Gln Gly Pro 70 | Ile Ile T | acc aac aac Thr Asn Asn 75 | cgc ttc acc Arg Phe Thr 80 | tat gcc 298 Tyr Ala |
| agt tac aac Ser Tyr Asn 85 | agc act gac Ser Thr Asp | agc ttc a Ser Phe I 90 | atc tcg gag Ile Ser Glu | ttg atc atc Leu Ile Ile 95 | cat gat 346 His Asp |
| gtg cag ccc Val Gln Pro 100 | agt gac tcg Ser Asp Ser | gga tcc g Gly Ser V 105 | gtg caa tgc Val Gln Cys | agc ctg cag Ser Leu Gln 110 | aac agc 394 Asn Ser |
| cat ggg ttt His Gly Phe 115 | gga tct gcc Gly Ser Ala 120 | ttc ctc t Phe Leu S | tca gtg caa Ser Val Gln 125 | gac agt att Asp Ser Ile | gga gag 442 Gly Glu 130 |
| gaa ggc cca Glu Gly Pro | gca ctg ccg Ala Leu Pro 135 | acc tgg o | gcc atc atc Ala Ile Ile 140 | ctg ctg gca Leu Leu Ala | gtg gcc 490 Val Ala 145 |
| ttt tcc ttg Phe Ser Leu | ctc ttg atc Leu Leu Ile 150 | Leu Ile 1 | att gtt ttg Ile Val Leu 155 | att ata ata Ile Ile Ile 160 | ttc tgt 538 Phe Cys |
| tgc tgt tgt Cys Cys Cys | gcc tcc agg Ala Ser Arg | aga gaa a Arg Glu I | aag gaa gaa Lys Glu Glu | tct act tat Ser Thr Tyr | caa aat 586 Gln Asn |

| | | 165 | | | | | 170 | | | | | | 175 | | | | | |
|---------------------------------------|---------------------------|--------------------|-------------------------|-------------------------------|--------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|--------------------------|--------------------------------|--------------------------------|-------------------------|-------------------------|--------------------------------|---|-----|--|
| gaa Glu | ata Ile 180 | Arg | aaa Lys | tct Ser | gca Ala | aac Asn 185 | atg Met | agg Arg | aca Thr | aac Asn | aaa Lys 190 | gca Ala | gat Asp | ccg Pro | gag Glu | 6 | 534 | |
| aca Thr 195 | Lys | tta Leu | aaa Lys | agt Ser | gga Gly 200 | aag Lys | gaa Glu | aac Asn | tac Tyr | ggg Gly 205 | tac Tyr | agt Ser | tcg Ser | gat Asp | gag Glu 210 | 6 | 82 | |
| gca Ala | aag Lys | gct Ala | gca Ala | cag Gln 215 | act Thr | gca Ala | tct Ser | ctc Leu | cct Pro 220 | cct Pro | aaa Lys | tct Ser | gct Ala | gaa Glu 225 | gtc Val | 7 | 30 | |
| agc Ser | ctt Leu | cca Pro | gaa Glu 230 | aaa Lys | cgc Arg | agc Ser | agt Ser | agc Ser 235 | ctt Leu | cct Pro | tat Tyr | cag Gln | gaa Glu 240 | ctc Leu | aat Asn | 7 | 78 | |
| aaa Lys | cat His | cag Gln 245 | ccc Pro | ggt Gly | cca Pro | gca Ala | act Thr 250 | cat His | cca Pro | cgg Arg | gtt Val | tcc Ser 255 | ttt Phe | gac Asp | atc Ile | 8 | 326 | |
| gcc Ala | agt Ser 260 | cct Pro | cag Gln | aag Lys | gtc Val | aga Arg 265 | aat Asn | gtg Val | act Thr | tta Leu | gtg Val 270 | taat | caaa | gac | | 8 | 72 | |
| ttc | tcat | gac t | gtac | cttgg | gt go | ca | | | | | | | | | | 8 | 95 | |
| <21: <21: <21: | 1> 2 | 12 270 PRT | | | | | | | | | | | | | | | | |
| <21 | 3> 1 | Mus n | แนรดบ | ılus | | | | | | | | | | | | | | |
| <21: <40 | | Mus n 12 | nuscu | ılus | | | | | | | | | | | | | | |
| <40 | 0> 1 | L2 | nuscu Ser | | Arg | Asp | Val | Leu | Ala 10 | Val | Leu | Val | Ile | Leu 15 | Ala | | | |
| <400 Met 1 | O> : | l2 Gly | | Trp 5 | | | | | 10 | | | | | 15 | | | | |
| <400 Met 1 Gln | O> 1 Glu Leu | Gly Thr | Ser Ala | Trp 5 Ser | Gly | Ser Asp | Ser | Tyr 25 | 10 Gln | Ile | Ile | Glu | Gly 30 | 15 Pro | Gln | | | |
| <400 Met 1 Gln Asn | O> 1 Glu Leu Val | Gly Thr Thr 35 | Ser Ala 20 | Trp 5 Ser Leu | Gly Lys | Ser Asp | Ser Ser 40 | Tyr 25 Glu | 10 Gln Ala | Ile His | Ile Phe | Glu Asn 45 | Gly 30 Cys | 15 Pro | Gln Val | | | |
| <400 Met 1 Gln Asn | Glu Leu Val | Gly Thr Thr 35 | Ser Ala 20 Val | Trp 5 Ser Leu Lys | Gly Lys Leu | Ser Asp Leu 55 | Ser Ser 40 Met | Tyr 25 Glu Trp | 10 Gln Ala Thr | Ile His Leu | Ile Phe Asn 60 | Glu Asn 45 Gln | Gly 30 Cys Met | 15 Pro Thr Val | Gln Val Val | | | |
| <400 Met 1 Gln Asn Thr | Glu Leu Val His 50 | Gly Thr Thr 35 Gly | Ser Ala 20 Val Trp Thr | Trp 5 Ser Leu Lys | Gly Lys Leu Gln 70 | Ser Asp Leu 55 | Ser Ser 40 Met | Tyr 25 Glu Trp | Gln Ala Thr | Ile His Leu Thr | Ile Phe Asn 60 Asn | Glu Asn 45 Gln Asn | Gly 30 Cys Met | 15 Pro Thr Val | Gln Val Val Thr 80 | | | |



| 35 | | | | | 40 | | | | | 45 | | | | | 50 | | |
|---------------------------------|-------------------|---------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|---|-----|
| ggc Gly | tgg Trp | aag Lys | ctt Leu | ctc Leu 55 | atg Met | tgg Trp | act Thr | ctt Leu | aac Asn 60 | caa Gln | atg Met | gtg Val | gtg Val | ctg Leu 65 | agt Ser | 2 | 250 |
| ctc Leu | acc Thr | acc Thr | caa Gln 70 | gga Gly | ccc Pro | atc Ile | atc Ile | acc Thr 75 | aac Asn | aac Asn | cgc Arg | ttc Phe | acc Thr 80 | tat Tyr | gcc Ala | 2 | 298 |
| | | | | | gac Asp | | | | | | | | | | | 3 | 346 |
| gtg Val | cag Gln 100 | ccc Pro | agt Ser | gac Asp | tcg Ser | gga Gly 105 | tcc Ser | gtg Val | caa Gln | tgc Cys | agc Ser 110 | ctg Leu | cag Gln | aac Asn | agc Ser | 3 | 394 |
| cat His 115 | ggg Gly | ttt Phe | gga Gly | tct Ser | gcc Ala 120 | ttc Phe | ctc Leu | tca Ser | gtg Val | caa Gln 125 | gaa Glu | tct Ser | act Thr | tat Tyr | caa Gln 130 | 4 | 442 |
| aat Asn | gaa Glu | ata Ile | agg Arg | aaa Lys 135 | tct Ser | gca Ala | aac Asn | atg Met | agg Arg 140 | aca Thr | aac Asn | aaa Lys | gca Ala | gat Asp 145 | ccg Pro | 4 | 190 |
| gag Glu | aca Thr | aag Lys | tta Leu 150 | aaa Lys | agt Ser | gga Gly | aag Lys | gaa Glu 155 | aac Asn | tac Tyr | ggg Gly | tac Tyr | agt Ser 160 | tcg Ser | gat Asp | Ę | 538 |
| gag Glu | gca Ala | aag Lys 165 | gct Ala | gca Ala | cag Gln | act Thr | gca Ala 170 | tct Ser | ctc Leu | cct Pro | cct Pro | aaa Lys 175 | tct Ser | gct Ala | gaa Glu | Ę | 586 |
| | | | | | aaa Lys | | | | | | | | | | | 6 | 634 |
| | | | | | ggt Gly 200 | | | | | | | | | | | (| 682 |
| | | | | | aag Lys | | | | | | | | taa | taaag | gac | - | 731 |
| ttctcatgac tgtacttggt gca · 754 | | | | | | | | | | | | 754 | | | | | |
| <21: <21: <21: <21: | 1> : 2> : | 14 223 PRT Mus 1 | musci | ulus | | | | | | | | | | | | | |
| <400> 14 | | | | | | | | | | | | | | | | | |
| Met 1 | Glu | Gly | Ser | Trp 5 | Arg | Asp | Val | Leu | Ala 10 | Val | Leu | Val | Ile | Leu 15 | Ala | | |
| Gln | Leu | Thr | Ala 20 | Ser | Gly | Ser | Ser | Tyr 25 | Gln | Ile | Ile | Glu | Gly 30 | Pro | Gln | | |

Asn Val Thr Val Leu Lys Asp Ser Glu Ala His Phe Asn Cys Thr Val

Thr His Gly Trp Lys Leu Leu Met Trp Thr Leu Asn Gln Met Val Val 50 55 60

Leu Ser Leu Thr Thr Gln Gly Pro Ile Ile Thr Asn Asn Arg Phe Thr 65 70 75 80

Tyr Ala Ser Tyr Asn Ser Thr Asp Ser Phe Ile Ser Glu Leu Ile Ile 85 90 95

His Asp Val Gln Pro Ser Asp Ser Gly Ser Val Gln Cys Ser Leu Gln 100 105 110

Asn Ser His Gly Phe Gly Ser Ala Phe Leu Ser Val Gln Glu Ser Thr 115 120 125

Tyr Gln Asn Glu Ile Arg Lys Ser Ala Asn Met Arg Thr Asn Lys Ala 130 135 140

Asp Pro Glu Thr Lys Leu Lys Ser Gly Lys Glu Asn Tyr Gly Tyr Ser 145 150 155 160

Ser Asp Glu Ala Lys Ala Ala Gln Thr Ala Ser Leu Pro Pro Lys Ser 165 170 175

Ala Glu Val Ser Leu Pro Glu Lys Arg Ser Ser Ser Leu Pro Tyr Gln 180 185 190

Glu Leu Asn Lys His Gln Pro Gly Pro Ala Thr His Pro Arg Val Ser 195 200 205

Phe Asp Ile Ala Ser Pro Gln Lys Val Arg Asn Val Thr Leu Val 210 215 220

<210> 15

<211> 631

<212> PRT

<213> Rattus rattus

<400> 15

Gln Leu Thr Ala Ser Gly Ser Ser Tyr Gln Ile Ile Glu Gly Pro Gln 20 25 30

Met Ala Tyr Ser Cys Gln Pro Leu Gln Glu Ser Pro Leu Leu Gly Phe 35 40 45

Pro Arg Leu Arg Phe Ile His Leu Phe Val Leu Leu Val Gly Leu Leu Gln Ile Ser Ser Gly Ile Val Gly Gln Val Ser Lys Ser Val Arg Asn Val Thr Val Leu Lys Asp Ser Glu Ala His Phe Asn Cys Thr Val Thr His Gly Trp Lys Leu Leu Met Trp Thr Leu Asn Gln Met Val Val Leu Ser Leu Thr Thr Gln Gly Pro Ile Ile Thr Asn Asn Arg Phe Glu Lys Ala Leu Leu Ser Cys Asp Tyr Lys Phe Cys Ser Glu Glu Gln Ser Ile His Arg Ile Tyr Trp Gln Lys His Asp Lys Met Val Leu Ser Val Ile Ser Gly Val Pro Glu Val Trp Pro Lys Tyr Lys Asn Arg Thr Thr Tyr Ala Ser Tyr Asn Ser Thr Asp Ser Phe Ile Ser Glu Leu Ile Ile 185 His Asp Val Gln Pro Ser Asp Ser Gly Ser Val Gln Cys Ser Leu Gln 200 Asn Ser His Gly Phe Gly Ser Ala Phe Leu Ser Val Gln Val Tyr Asp Ile Ala Asn Asn Tyr Ser Phe Ser Leu Leu Gly Leu Ile Leu Ser Asp Arg Gly Thr Tyr Thr Cys Val Val Gln Arg Tyr Glu Gly Gly Ser Tyr Val Val Lys His Leu Thr Thr Val Glu Val Met Gly Thr Leu Asn Ile Pro Ser Asn Asn Leu Ile Val Thr Glu Gly Glu Pro Cys Asn Val Thr 280 Cys Tyr Ala Val Gly Trp Thr Ser Leu Pro Asp Ile Ser Trp Glu Leu 295 Glu Val Pro Val Ser His Ser Leu Ser Val Arg Ala Asp Phe Pro Thr 310 315 Pro Asn Ile Thr Glu Tyr Gly Asn Pro Ser Ala Asp Ile Lys Arg Ile Thr Cys Phe Ala Ser Gly Gly Phe Pro Lys Pro Arg Leu Ser Trp Leu Glu Asn Gly Arg Glu Leu Asn Ser Tyr Asn Ser Phe Leu Glu Pro Gly Asn Phe Met Arg Val Leu Ser Val Leu Asp Leu Thr Pro Leu Gly Asn Gly Thr Leu Thr Cys Val Ala Glu Leu Lys Asp Leu Gln Ala Ser Lys





390 385 395 400 Ser Leu Thr Val Asn Leu Gly Ile Asn Thr Thr Ile Ser Gln Asp Pro 410 Glu Ser Glu Leu Tyr Thr Ile Ser Ser Gln Leu Asp Phe Asn Ala Thr Tyr Asp His Phe Ile Asp Cys Phe Ile Glu Tyr Gly Asp Ala His Val Ser Gln Asn Phe Thr Val Val Gln Pro Pro Pro Asp Ser Ile Gly Glu 455 460 Glu Gly Pro Ala Leu Pro Thr Trp Ala Ile Ile Leu Leu Ala Val Ala Phe Ser Leu Leu Ile Leu Ile Ile Val Leu Ile Ile Phe Thr 490 Trp Val Lys Pro Pro Glu Asp Pro Pro Asp Glu Lys Gln Thr Val Pro Phe Ala Trp Ala Gly Pro Asp Ala Val Lys Ala Ile Ile Ile Phe Phe 520 Ile Ala Ile Thr Val Ile Ala Val Ile Ala Ala Ile Ala Ile Ile Ile Phe Cys Cys Cys Ala Ser Arg Arg Glu Lys Glu Glu Ser Thr Tyr Gln Asn Glu Ile Arg Lys Ser Ala Asn Met Arg Thr Asn Lys Ala Asp 570 Pro Glu Thr Lys Leu Lys Ser Gly Lys Glu Asn Tyr Gly Tyr Ser Ser Asp Glu Cys Ile Thr Val Lys Phe Arg Arg Cys Phe Arg Arg Asn Glu Ala Ser Arg Glu Thr Asn Lys Asn Leu Tyr Ile Gly Pro Val Glu 615 620 Ala Ala Glu Gln Thr Val